

Motorola[®] HOME Radio

SERVICE MANUAL

MODELS
6X11U
6X12U
CHASSIS
HS-245

GENERAL INFORMATION

TYPE - AC-DC operated table model superheterodyne receiver with loop antenna.

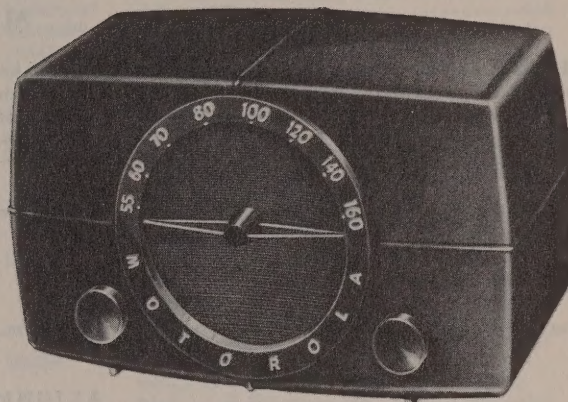
RECEIVER MODELS -

Model	Color
6X11U	Walnut
6X12U	Ivory

TUNING RANGE - 535 to 1620 Kc IF - 455 Kc

TUBE COMPLEMENT - 12BA6 - RF Amplifier
12BE6 - Converter
12BA6 - IF Amplifier
12AT6 - Det, AVC & 1st AF Amp
35C5 - Power Amplifier
35W4 - Rectifier

POWER SUPPLY - 117 volts AC or DC, 35 watts



INSTALLATION & OPERATING INSTRUCTIONS

POWER SWITCH AND VOLUME CONTROL. Operated with left-hand knob. NOTE: Reverse line plug in electrical outlet if radio does not operate from DC. When operating from AC, reversing the line cord plug in wall outlet, may sometimes improve reception.

TUNING. Tune stations with right-hand knob.

ANTENNA. A built-in loop antenna eliminates the need for an outside antenna in most locations. When receiving a weak station, rotate the receiver slightly for best signal strength. If additional pick-up is necessary, connect an external antenna to the radio by following the instructions printed on the rear panel. CAUTION: Never connect the radio chassis to a water pipe, radiator, or other ground.

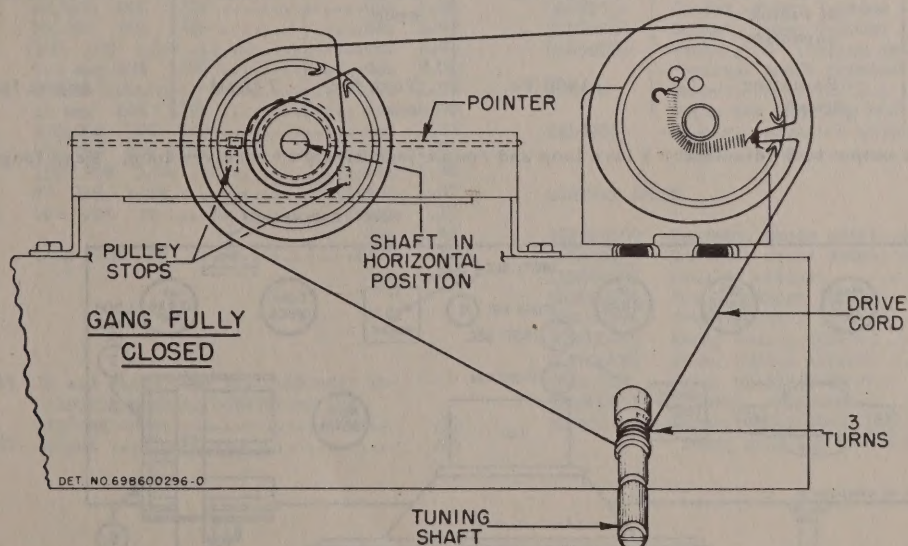


FIGURE 1. STRING DRIVE DETAIL

4545 AUGUSTA BOULEVARD

Motorola Inc.

CHICAGO 51, ILLINOIS

SERVICE NOTES

The chassis of this receiver is isolated from the AC power line circuit by a capacitor to eliminate the shock hazard when handling the receiver. However, as an additional precaution when aligning or servicing the receiver from AC, an isolation transformer should be inserted between the power line and the chassis.

To remove the chassis from the cabinet:

1. Pull off the two radio control knobs.

2. Pull off the pointer.
3. Remove the split plugs which hold the loop to the cabinet.
4. From the back of the cabinet, remove the two hex head screws at the rear edge of the radio chassis.
5. Slide the radio chassis and loop from the cabinet.

ALIGNMENT

NOTE: It is recommended that an isolation transformer be placed between the power line and the receiver to avoid hum and electrical shocks. If an isolation transformer is not available, connect the low side of the signal generator to B-through a .1 mf capacitor.

1. Connect a low range output meter across the speaker voice coil.
2. Connect the low side of the signal generator to B-.
3. Set the signal generator for 400 cycle, 30% modulation.

4. Turn the receiver volume control to maximum.
5. Use a small fibre screwdriver for aligning the IF and diode transformers.
6. As stages are brought into alignment, reduce the signal generator output to a level which produces less than .40 volts (.05 watt) across the voice coil to avoid overloading the receiver.
7. See Figure 2 for adjustment locations and the following chart for procedure.

ALIGNMENT CHART

STEP	DUMMY ANTENNA	GENERATOR CONNECTION	GENERATOR FREQUENCY	GANG SETTING	ADJUST	REMARKS
IF ALIGNMENT						
1.	.1 mf	Rear stator of tuning capacitor	455 Kc	Fully open	1, 2, 3 & 4 (IF cores)	Adjust for maximum.
WAVETRAP						
2.	.1 mf	Rear stator of tuning capacitor	455 Kc	Fully open	5 (Wavetrap)	Adjust for minimum.
RF ALIGNMENT						
3.	.1 mf	Rear stator of tuning capacitor	1620 Kc	Fully open	6 (Osc)	Adjust for maximum.
4.	-	Radiation loop*	1400 Kc	Tune for max	7 (Ant)	Adjust for maximum.

*Connect generator output to 5" diameter, 5 turn loop and couple inductively to receiver loop. Keep loops at least 12" apart.

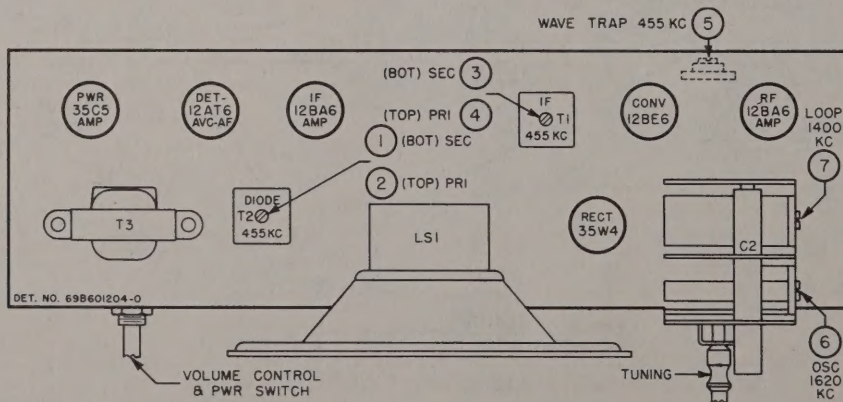


FIGURE 2. TUBE & TRIMMER LOCATIONS

REPLACEMENT PARTS LIST

NOTE: When ordering parts specify model number of set in addition to part number and description of part.

Ref. No.	Part Number	Description	List Price	Part Number	Description	List Price
CHASSIS PARTS - ELECTRICAL				CHASSIS PARTS - MECHANICAL		
<u>Capacitors</u>				26A473002	Base, tube shield mtg .....	.10
C-1	8R9821	Paper: .05 mf 200V .....	.30	1X600627	Bracket and Bushing Assembly, pointer shaft .....	.30
C-2	19B600483	Variable, 2-gang: includes pulley..	2.30	7K600579	Bracket, loop mtg .....	.10
C-3	21R6641	Mica: 100 mmf 500V .....	.20	7A600476	Bracket, tuning shaft mtg .....	.10
C-4	20A26941	Mica, variable: 6 mmf-60 mmf; includes bracket .....	.20	42A485548	Clip, coil can mtg .....	.20
C-5	8R9821	Paper: .05 mf 200V .....	.20	42A75825	Clip, electrolytic mtg .....	.40
C-6	21B482847	Ceramic, multiple: 2000 mmf, 220 mmf, 220 mmf, 5000 mmf .....	.65	30A470651	Cord, line and plug: 6 ft long .....	.75
C-7	8R9843	Paper: .15 mf 200V .....	.20	5A19658	Eyelet, spacer (gang mtg) .....	.20
C-8	8R9816	Paper: .05 mf 400V .....	.20	5A70404	Grommet, rubber (gang mtg) .....	.60
C-9	23K484234	Electrolytic: 40-20-20 mf/150V....	1.10	14A482844	Insulator, cord outlet .....	.25
C-10	8R9802	Paper: .02 mf 400V .....	.20	29R3010	Lug, soldering .....	.30
<u>Capacitor-Resistor</u>				2S7051	Nut, hex: 3/8-32 x 9/16; Palnut; stl; cad pl (volume control mtg) .....	.15
CR-1	21B484227	Capacitor-Resistor: 2 lead; 33,000 ohms, 5000 mmf .....	.35	1X600590	Pulley and Bushing Assembly, pointer drive	.25
CR-2	21B601007	Capacitor-Resistor: 7 lead; 2000 mmf, 220 mmf, 5000 mmf, 110 mmf, 110 mmf, 6.8 meg, 470,000 ohms, 470,000 ohms .....	.85	5S7771	Rivet: .088 x 3/16; stl; nkl pl (tube socket mtg and shield base mtg)....per/c	.50
<u>Coils</u>				5S7707	Rivet: .125 x 5/32; stl; nkl pl (tuning shaft bracket mtg, output transformer mtg, variable capacitor mtg, electrolytic clip mtg, and tube spring shield mtg) .....	.50
L-1	24C600539	Loop and Panel Assembly	1.05	3S2294	Screw, machine: 6-32 x 1/2; plain hex head; locking type; stl; cad pl (gang mtg) .....	.15
L-2	24A77336	Wavetrap .....	.40	3S7477	Screw, machine: 8-32 x 1/4; type #1; plain hex head; stl; cad pl (loop back mtg)doz	.15
L-3	24K600813	BC Oscillator Coil .....	.80	3S7316	Screw, machine: 8-32 x 3/8; slotted hex head; locking type; stl; cad pl (speaker mtg) .....	.15
<u>Speaker</u>				3S2965	Screw, sheet metal: #6 x 3/16 PKZ plain hex head; stl; cad pl (pointer shaft bracket mtg) .....	.50
LS-1	50K600538	Speaker, FM: 5-1/4"; 3.2 ohm VC....	3.45	3S3398	Screw, sheet metal: #6 x 3/8 PKZ plain hex head; stl; cad pl (loop bracket mtg) .....	.50
<u>Resistors</u>				3S7148	Setcrew: 6-32 x 1/8; Allen head; stl; cad pl (pointer drive pulley & bushing retainer) .....	.10
Note: All resistors are insulated carbon type unless otherwise specified.				1K600595	Shaft and Pulley Assembly, tuning .....	.20
R-1	6R6075	100,000 20% 1/2W	1.00	47K600509	Shaft, pointer: brass .....	.10
R-2	6R6018	100 20% 1/2W	1.00	26A481521	Shield, spring (for 12BE6 tube) .....	.50
R-3	6R6039	4700 20% 1/2W	1.00	26A90301	Shield, tube (for 12AT6 tube) .....	.15
R-4	6R6028	22,000 20% 1/2W	1.00	9A472534	Socket, tube: 7-prong .....	.15
R-5	6R6028	22,000 20% 1/2W	1.00	9K580218	Socket, tube: 8-prong .....	.15
R-6	6R6018	100 20% 1/2W	1.00	4K692188	Washer, "c" (tuning shaft retainer and pointer shaft retainer) .....	.20
R-7	6R2118	3.3 meg 20% 1/2W	1.00	4S7614	Washer, flat: 11/16 x 11/64 x .036 thick; stl; cad pl (loop back mtg) .....	.15
R-8	18K485925	Volume Control: 1 meg	1.50	4K482859	Washer, insulated shoulder (loop bracket mtg) .....	.15
R-9	6R2109	10 meg 20% 1/2W	1.00	CABINET PARTS		
R-10	6R6032	470,000 20% 1/2W	1.00	16E600169	Cabinet, table model: molded; walnut(6X11U)	5.30
R-11	6R6032	470,000 20% 1/2W	1.00	16K600175	Cabinet, table model: molded; ivory (6X12U)	5.95
R-12	6R3992	150 20% 1/2W	1.00	13B600535	Grille, cabinet	1.05
R-13	6R5683	27 10% 1/2W	1.00	36B600570	Knob, pointer (6X11U) .....	.15
R-14	6R488025	100 20% 1W .....	.15	36K600571	Knob, pointer (6X12U) .....	.15
R-15	6R3953	1000 20% 1W	1.45	36B600455	Knob, tuning (6X11U) .....	.10
<u>Transformers</u>				36K600456	Knob, tuning (6X12U) .....	.10
T-1,2	24B485553	IF and Diode, 455 Kc: complete; including padding capacitors and tuning cores .....	.95	38A25507	Plug, split (back mtg) .....	.15
T-3	25B482858	Output .....	.95	52A600451	Pointer, dial: brass .....	.25
				3S3371	Screw, sheet metal: #8 x 3/8 PKZ plain hex head; stl; cad pl (chassis mtg) ...per/c	.50

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

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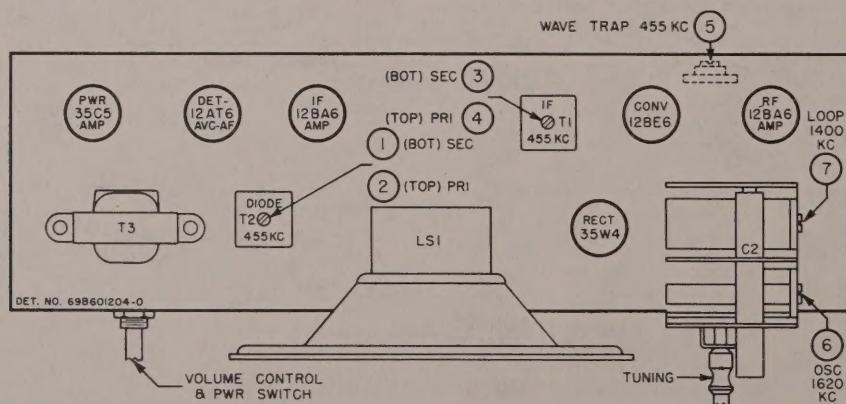


FIGURE 2. TUBE & TRIMMER LOCATIONS

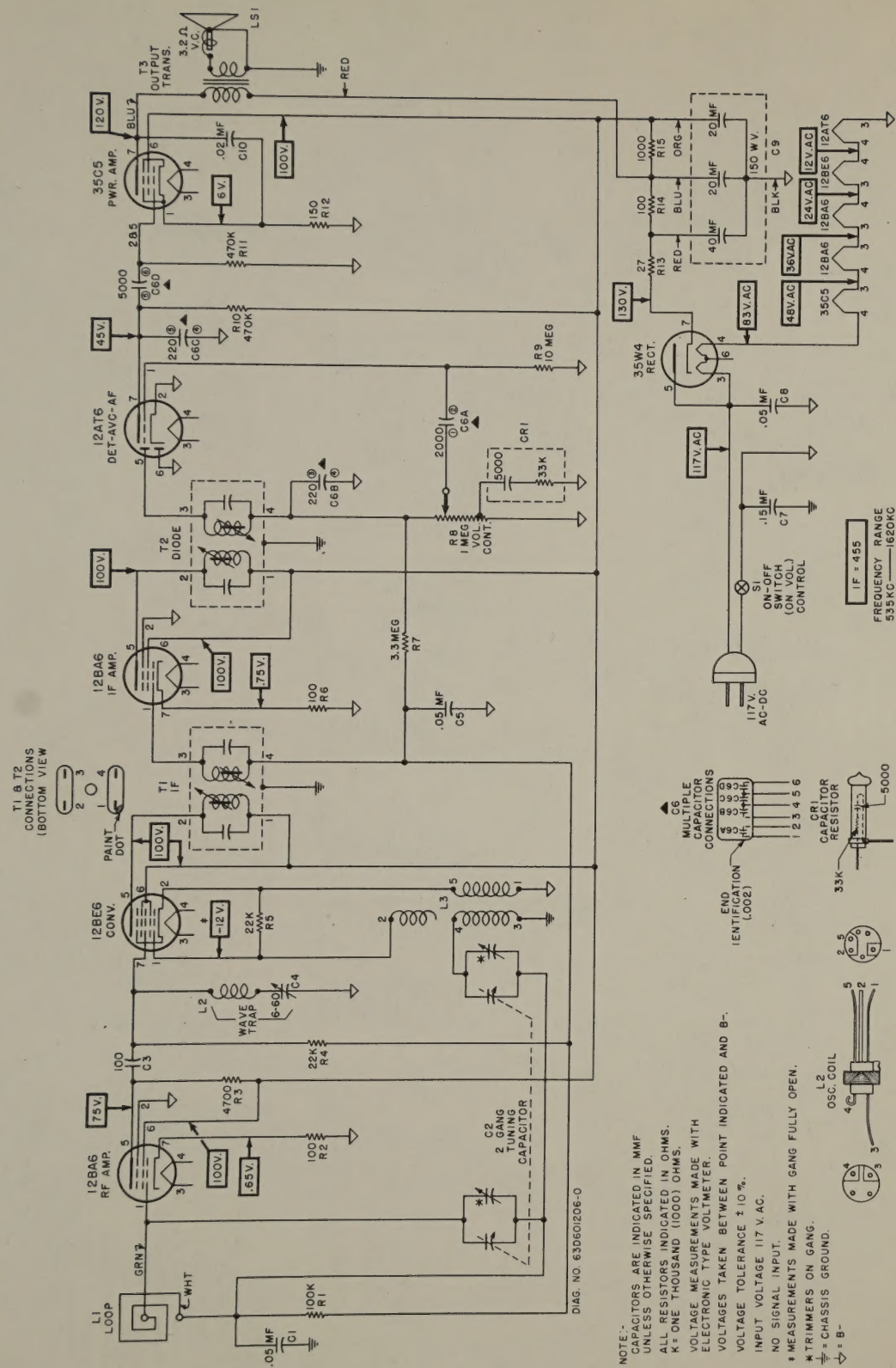


FIGURE 3. SCHEMATIC DIAGRAM OF CHASSIS USING MULTIPLE CERAMIC CAPACITOR

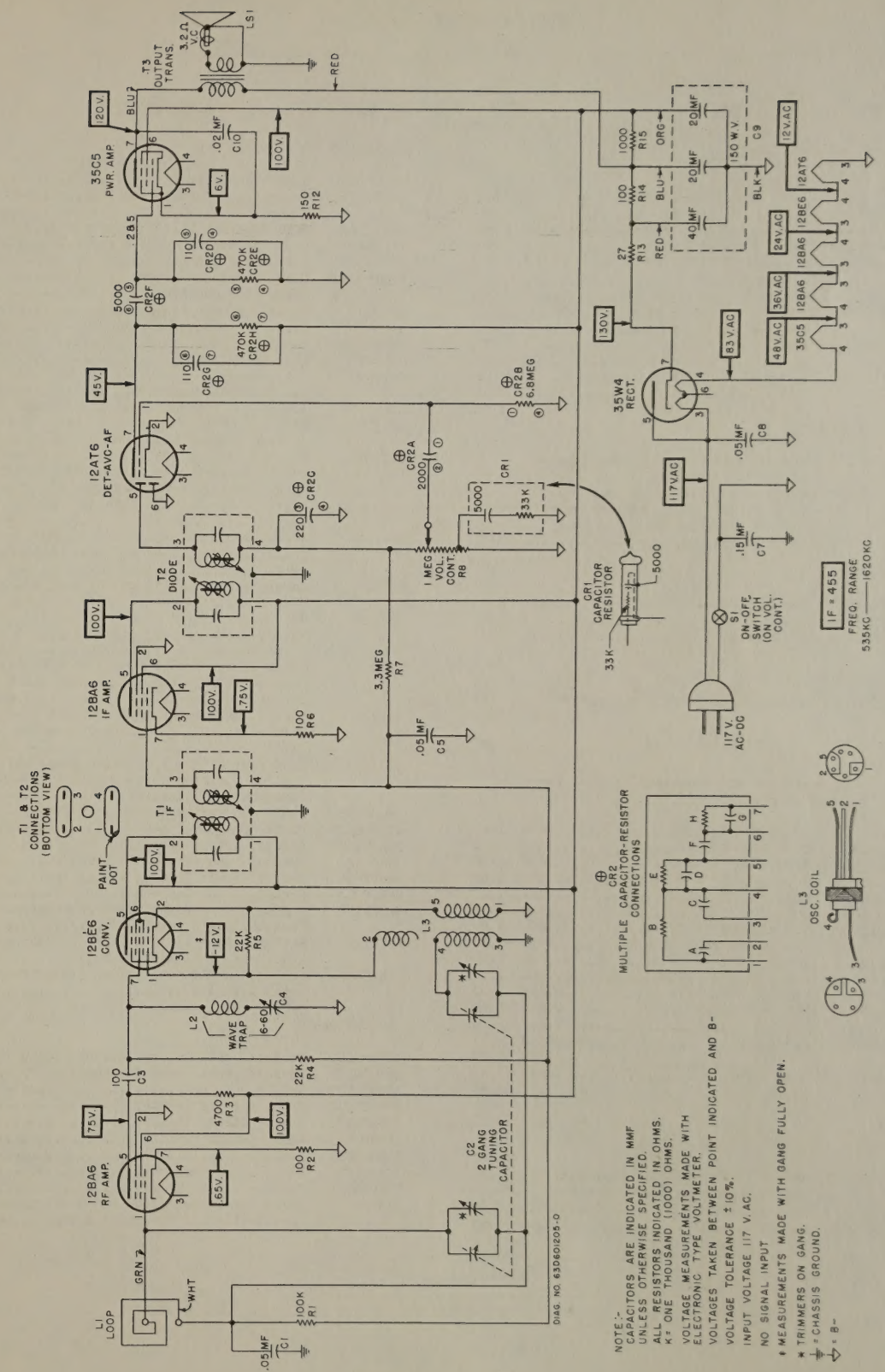
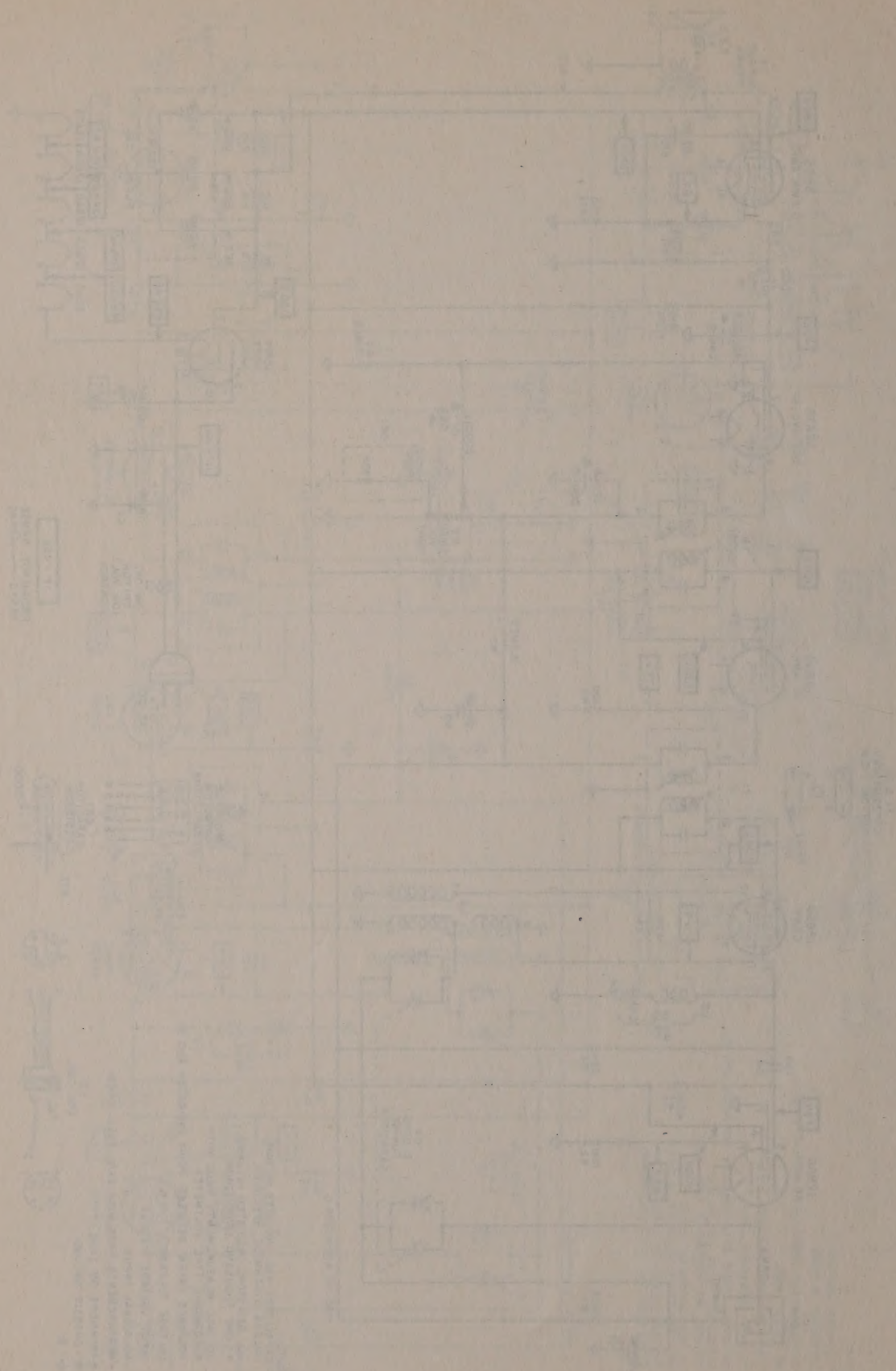


FIGURE 4. SCHEMATIC DIAGRAM OF CHASSIS USING MULTIPLE CERAMIC CAPACITOR-RESISTOR



10MCP750